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**ABSTRACT**

Techniques for detection and treatment of myocardial ischemia are described that monitor both the electrical and dynamic mechanical activity of the heart to detect and verify the occurrence of myocardial ischemia in a more reliable manner. The occurrence of myocardial ischemia can be detected by monitoring changes in an electrical signal such as an ECG or EGM, and changes in dynamic mechanical activity of the heart. Dynamic mechanical activity can be represented, for example, by a heart acceleration signal or pressure signal. The electrical signal can be obtained from a set of implanted or external electrodes. The heart acceleration signal can be obtained from an accelerometer or pressure sensor deployed within or near the heart. The techniques correlate contractility changes detected by an accelerometer or pressure sensor with changes in the ST electrogram segment detected by the electrodes to increase the reliability of ischemia detection.